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## CLAIMS:

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- 1. (Original) A lithium-metal-oxide electrode compositions and structures having a layered crystallographic structure and the general formula  $Li_xMn_yM_1$ .  $yO_2$  where  $0 \le x \le 0.20$ , 0 < y < 1, manganese is in the 4+ oxidation state and M is one or more transition metal or other cations.
- 2. (Original) A material according to claim 1, wherein M is chosen from all of the other first row transition metals: Ti, V. Cr, Fe, Co, Ni and Cu, and other cations with appropriate sized ionic radii: Al, Mg, Mo, W, Ta, Si, Sn, Zr, Be, Ca, Ga, and P, but is not solely Ni.
- 3. (Original) A material according to claim 1, wherein M is one or more transition metal or other cations chosen from the other first row transition metals: Ti, V. Cr, Fe, Co, Ni and Cu, and other metal cations such as Al, Mo, W, Ta, Ga and Zr.
  - 4. (Original) A material according to claim 1, wherein M is one or more transition metal or other metal cations chosen from the first row transition metals and Al.
  - 5. (Amended) The use of a material according to <u>claim 1</u> any of the <u>preceding claims</u>, as positive electrode in a non-aqueous lithium cell or battery, such as a lithium ion cell.

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6. (Original) A process for making a material of formula  $Li_xMn_yM_{1-y}O_2$ , wherein  $x \le 0.2$ , 0 < y < 2, Mn is Mn+4 and M is one or more transition metal cations or other cations, comprising providing a starting material of formula  $Li_{1+x}Mn_yM_{1-y}O_2$ , wherein x is equal to or greater than 0, and M is one or more transition metal or other cations, as a cathode in a lithium ion cell, and charging the cell to a high voltage.

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- 7. (Original) A process according to claim 6, wherein M is chosen from all of the other first row transition metals: Ti, V. Cr, Fe, Co, Ni and Cu, and other cations with appropriate sized ionic radii: Al, Mg, Mo, W, Ta, Si, Sn, Zr, Be, Ca, Ga, and P, but is not solely Ni.
- 8. (Original) A process according to claim 6, wherein M is one or more transition metal or other metal cations chosen from the other first row transition metals: Ti, V. Cr, Fe, Co, Ni and Cu, and other cations such as Al, Mo, W, Ta, Ga and Zr.
- 9. (Original) A process according to claim 6, wherein M is one or more transition metal or other metal cations chosen from the first row transition metals and Al.
- 10. (Amended) A process according to claim 6 any of claims 6 to 9, wherein the voltage is in the range of 4.4 to 5 volts.